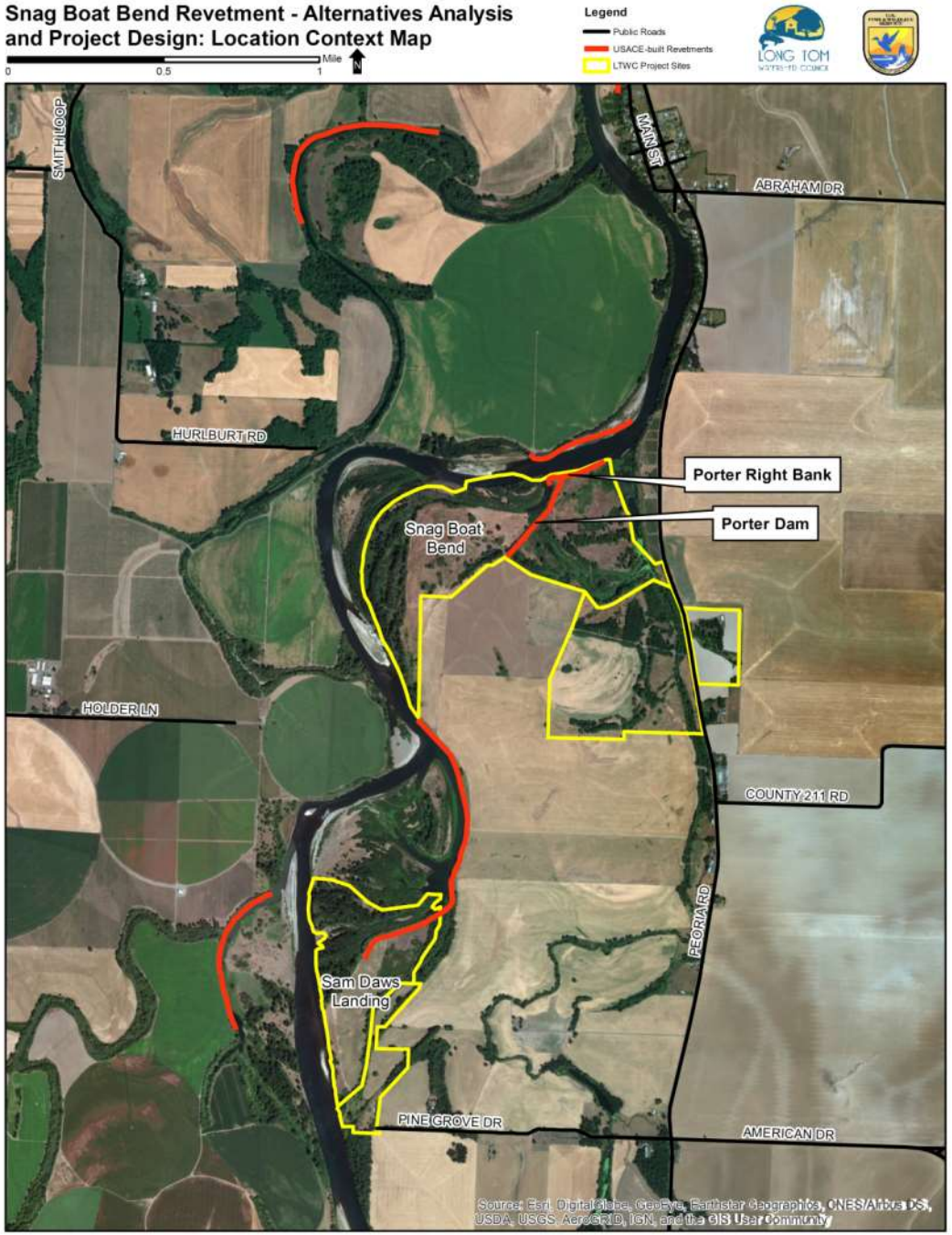
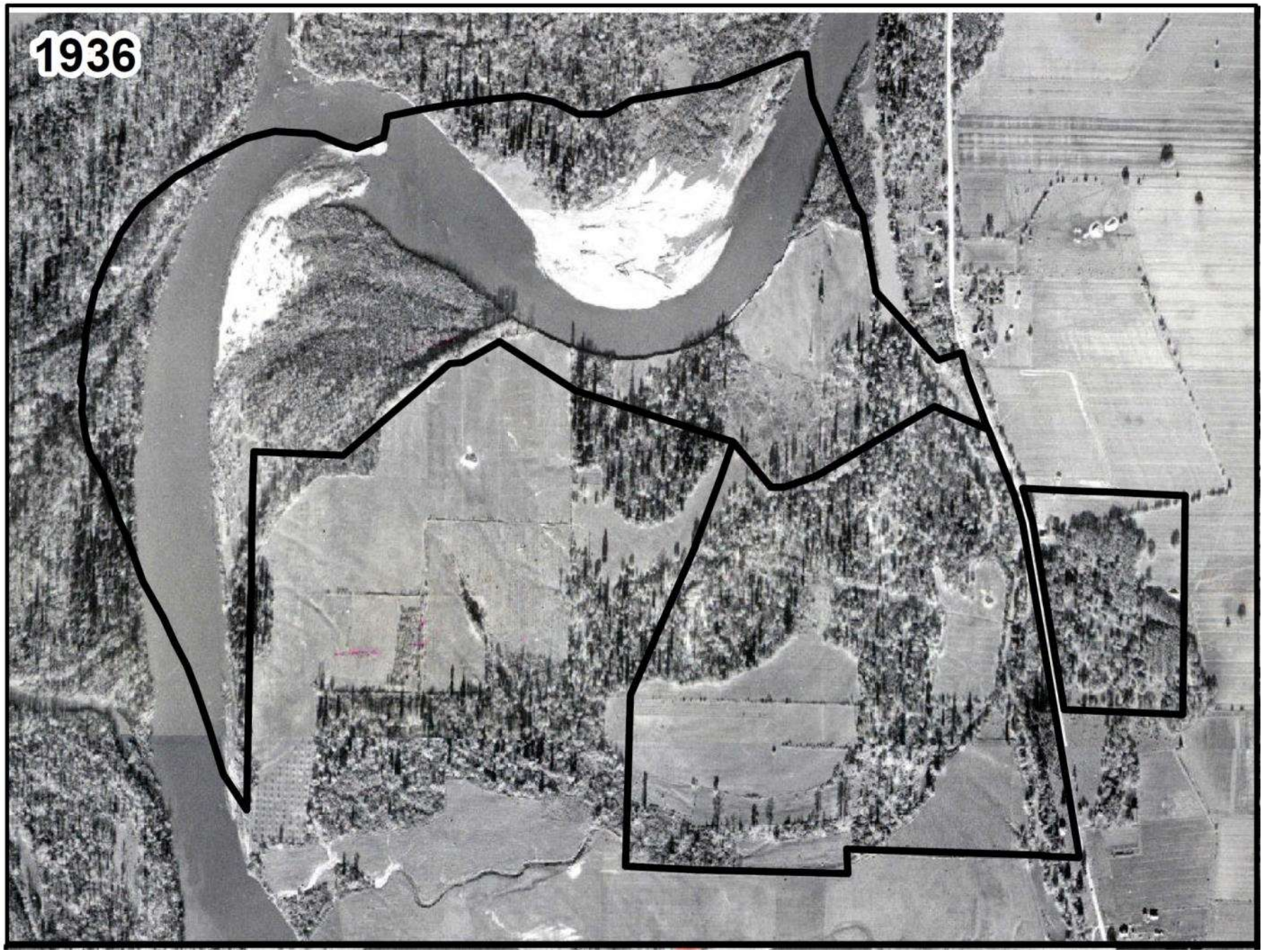
Floodplain Reconnection at Snag Boat Bend: Where There is a Will, is There a Way?

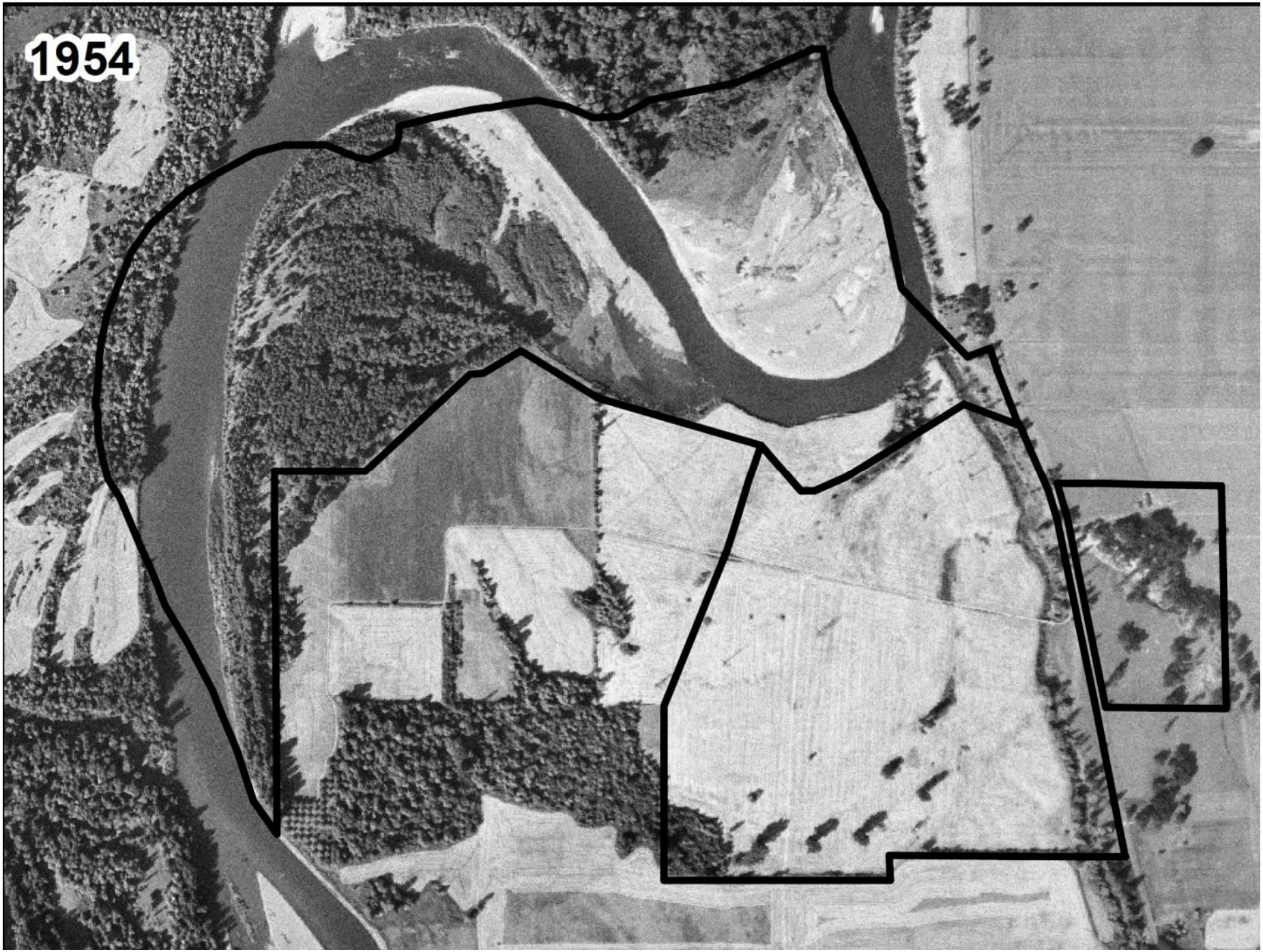
Jed Kaul, Long Tom Watershed Council

Snag Boat Bend

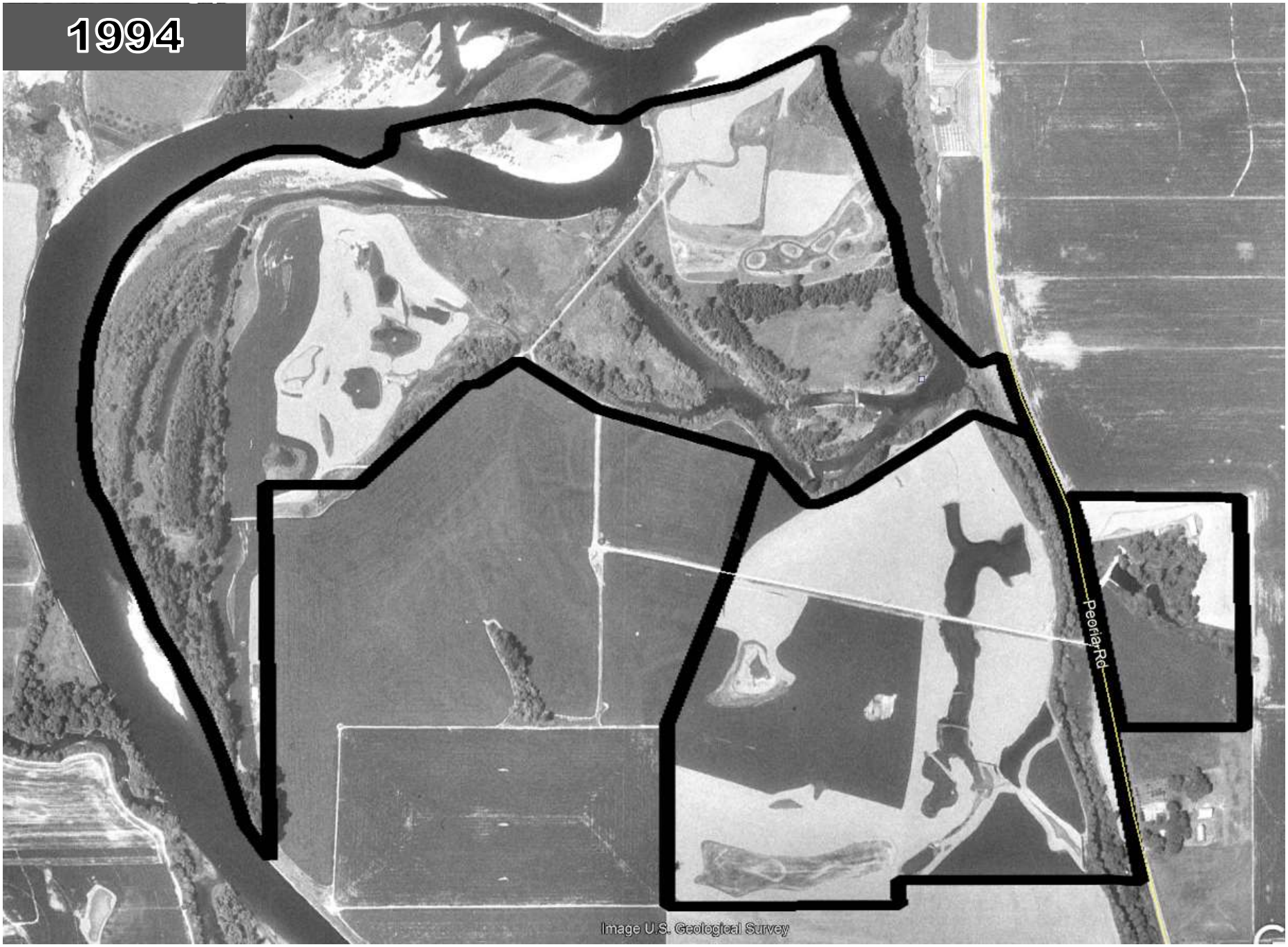
- Managed by U.S. Fish and Wildlife Service as a unit of Finley Refuge
- Acquired by USFWS in 2000
- First plantings in 2003 by USFWS and Greenbelt Land Trust (now 50’ tall!)
- LTWC involved in restoration starting in 2015; 120 acres of planting and 3 phases of earthwork completed so far.




1936


1954


1967


1994
Peoria Rd
Image U.S. Geological Survey


2018
Peoria Rd

Floodplain Reconnection Work Completed To-Date

Porter Dam and Right Bank Revetments

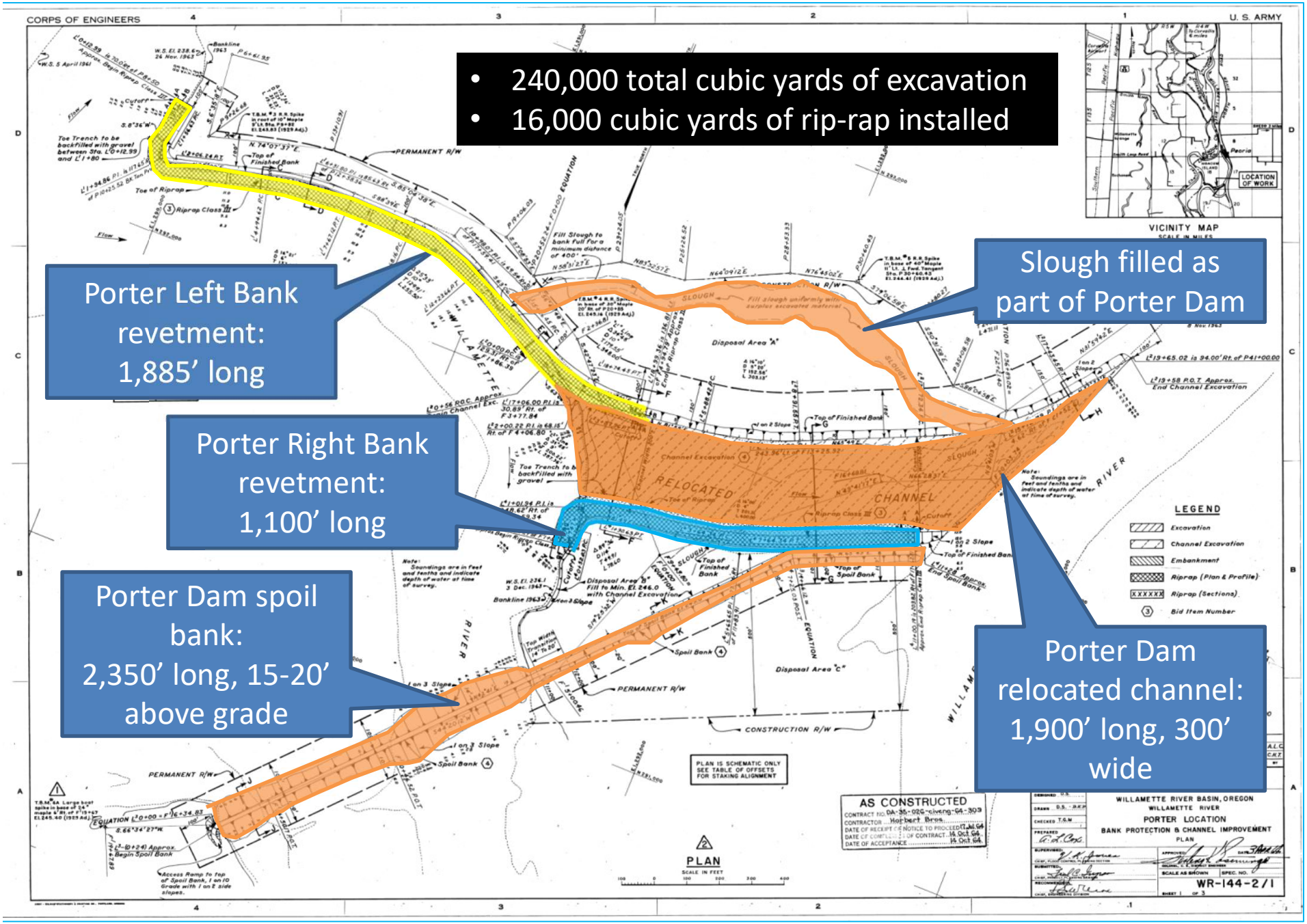
- Authorized by section 204 of the 1950 Flood Control Act. Landowner had lost 25 acres of land to erosion between 1936-1961.
- Constructed in 1964, a few months before the Christmas floods!
- Cost $252,000 to build, $2M in todays dollars.
- Built by a USACE contractor then O&M was transferred to the Linn County District Improvement Company no. 3, now defunct.

18. The damage caused by movement of eroded material into the channels, accumulation of trees, brush and other debris downstream, and other detrimental effects of the erosion, has been estimated at $21,640 annually.

19. Total benefits creditable to the project are shown in the following tabulation:

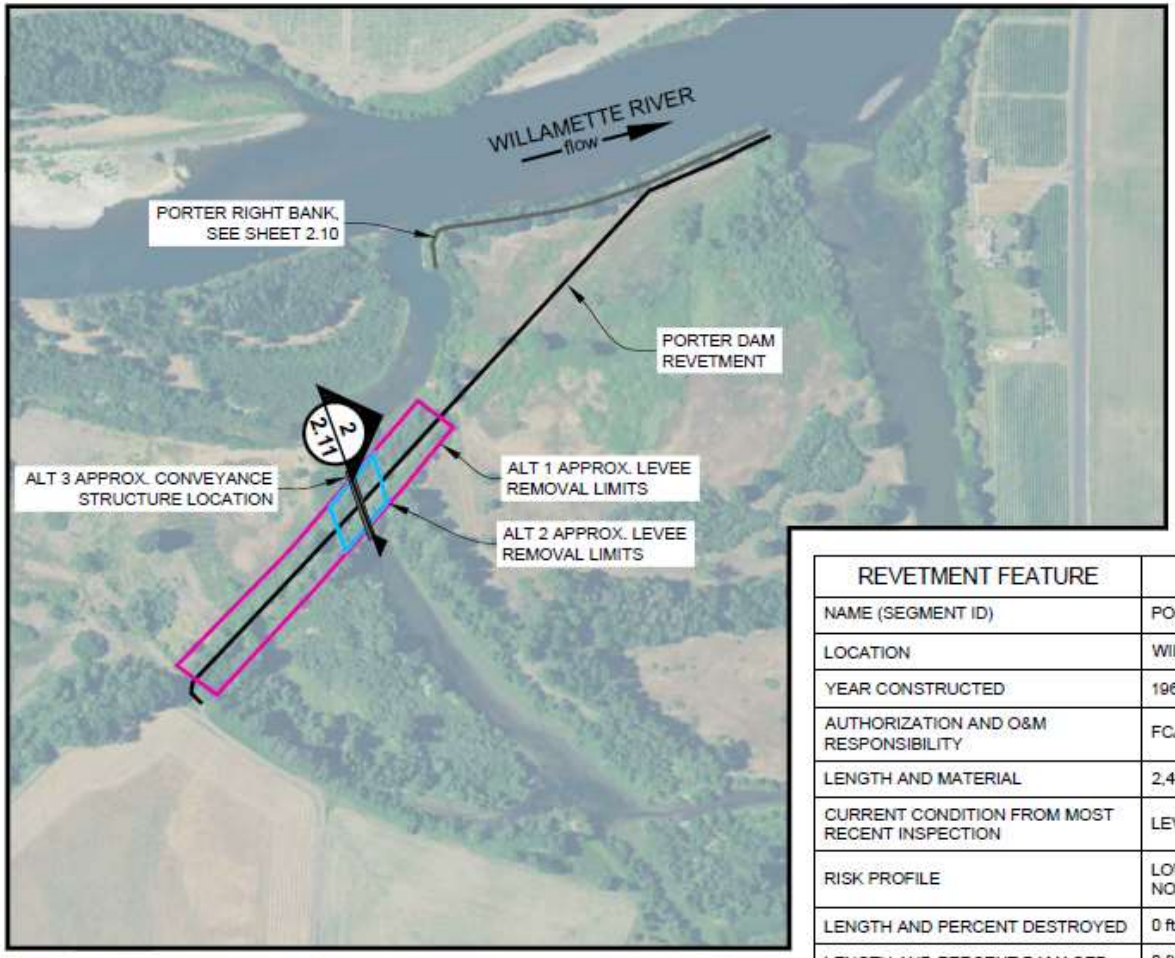
Direct benefits from the prevention of:	
Destruction of 118 acres in terms of loss of equivalent annual net returns	$6,960
Construction of bridges	580
Channel stabilization credit	21,640
Subtotal, equivalent annual direct benefits from reduction of damages	$29,180
Indirect benefits from the prevention of:	
Loss of wages and processors' profits	3,320
Total equivalent annual benefits from the reduction of damages	$32,500

With annual benefits at $32,500 and annual costs at $24,050, the benefit-to-cost ratio is 1.4 to 1.


CORPS OF ENGINEERS
U. S. ARMY
• 240,000 total cubic yards of excavation
• 16,000 cubic yards of rip-rap installed
Porter Left Bank revetment: 1,885’ long
Porter Right Bank revetment: 1,100’ long
Porter Dam spoil bank: 2,350’ long, 15-20’ above grade
Slough filled as part of Porter Dam
Porter Dam relocated channel: 1,900’ long, 300’ wide
VICINITY MAP
LOCATION OF WORK
LEGEND
Excavation
Channel Excavation
Embankment
Riprap (Plan & Profile)
Riprap (Sections)
Bid Item Number
RELOCATED CHANNEL
Disposal Area "A"
Disposal Area "C"
Spoil Bank
PERMANENT R/W
CONSTRUCTION R/W
PLAN
PLAN IS SCHEMATIC ONLY SEE TABLE OF OFFSETS FOR STAKING ALIGNMENT
AS CONSTRUCTED
WILLAMETTE RIVER BASIN, OREGON
WILLAMETTE RIVER
PORTER LOCATION
BANK PROTECTION & CHANNEL IMPROVEMENT
PLAN
WR-144-2/1

Geomorphic Change in the Historic Channel over 50 years

Porter Dam and Right Bank Revetment Restoration: Can We Make it Happen?



ALTERNATIVE CONCEPT	IMPLEMENTATION COST RANGE[1]
COMPLETE LEVEE REMOVAL	$7,389,503 ($5,911,602 - $8,867,404)
PARTIAL LEVEE REMOVAL	$1,439,003 ($1,151,202 - $1,726,804)
CONVEYANCE STRUCTURE	$460,759 ($368,607 - $552,911)

1 PROJECT COST ESTIMATE BASED ON SITE CONDITIONS, COST RANGE IS +/- 20% OF THE COST ESTIMATE.

- Cost!
- Effects of removal?
- **Bureaucracy!**

REVETMENT FEATURE	METRIC
NAME (SEGMENT ID)	PORTER DAM (5032010115)
LOCATION	WILLAMETTE RM 142.8, NEAR PEORIA, OR
YEAR CONSTRUCTED	1964
AUTHORIZATION AND O&M RESPONSIBILITY	FCA(S), LINN COUNTY DISTRICT IMPROVEMENT COMPANY NO. 3 (DEFUNCT)
LENGTH AND MATERIAL	2,408 ft, EARTHEN LEVEE
CURRENT CONDITION FROM MOST RECENT INSPECTION	LEVEE IS IN GOOD CONDITION
RISK PROFILE	LOW - NATURAL FLOODPLAIN AND HISTORICAL FLOODPLAIN CHANNEL ARE NOW MANAGED BY USFWS AS PART OF THE W.L. FINLEY REFUGE.
LENGTH AND PERCENT DESTROYED	0 ft, 0%
LENGTH AND PERCENT DAMAGED	0 ft, 0%

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CH 3 Listing Factor and CH 5 LFT	CH 7 Strategy or CH 6 VSP objective	Action ID and Priority	Recovery Action	Sub Action or Task	Focal Locations or Program	Schedule	Cost Basis	Unit Cost	Quanti ty	Total Cost	Key Entities / Potential Implement ers
Listing Factor: A LFT: 8a	Strategy: 1, 2, 3, 4, 5, 6 , via, Land Use Managemen t to address issue of - Physical Habitat Quality	37 - ESU-PHQ Priority: 2	Improve coordination and streamlining of habitat restoration efforts for a) impaired instream habitat complexity, b) floodplain processes and access to off-channel habitat by increasing lateral movement with improvements in revetments, dikes and floodwalls, and c) riparian conditions	1. Make this a task of the ESU Coordination Team. 1.1 identify specific coordination and implementation barriers and entities involved 1.2 work with entities to improve coordination and project streamlining	TBD	within 15 yrs	TBD	---	---	---	USACE, FEMA, USFS, USBLM, NRCS, ODFW, ODF, ODSL, ODA, SWCD, Counties, Municipaliti es, WS Councils

7.4 **<u>Restoration of Habitat at Revetments</u>: In coordination with the Services, the Action Agencies will undertake a comprehensive assessment of revetments placed or funded by the USACE Willamette River Bank Protection Program. The revetment assessment will be completed, including identifying sites with potential for modification, by December 31, 2010. The USACE will use applicable existing authorities and programs for funding habitat restoration identified in Table 9.7-2, as well as new programs that are applicable, to fund priority projects identified in this assessment.**

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